

WATER PERMIT NO. 7797-3

Name of Applicant: Geib Family Trust

Address: 20344 Hwy 25, DeSmet SD 57231

Phone: 605 203-0665

Amount of Water Claimed: 1.71 cfs

Total Acres: 120

Source of Water Supply: groundwater (one well)

Water to be used for: irrigation

County: Kingsbury

Type of Waste Disposal System:

Location: 6 miles northwest of DeSmet

PRIORITY

Date Received: 3-12-13

Application/License Fee: \$950

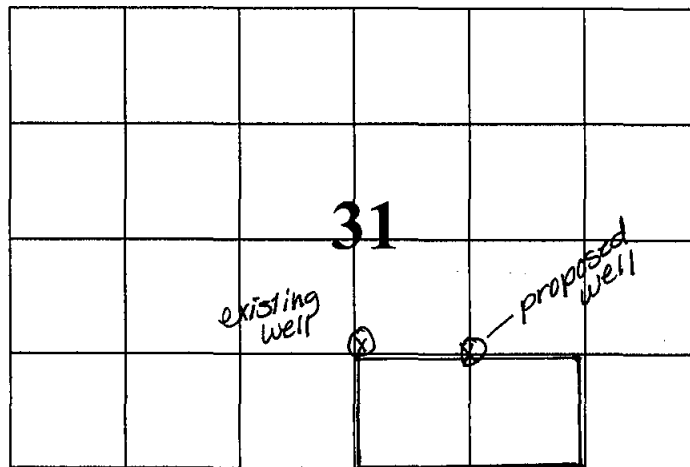
Corrected Application Received: 3/19/13 Period of Annual Use: April 1 – October 31

New 80

Remarks: Transfer the location of 40 acres covered by No. 3132-3.

Diversion Point: NW 1/4 SE 1/4 (existing well and center of the SE 1/4 (proposed well) Sec 31-T112N-R56W

Land to be Irrigated: S 1/2 SE 1/4 Sec 31-T112N-R56W



Depth of Well: 60

Well Driller:

Remarks:

Type of Map: aerial

Prepared by:

Reviewed and the Number Assigned on: 3-20-13

By: **Karen Schlaak**

Notice of Hearing - date to intervene: _____

SD EForm - 0499LD V4

FORM 2: Application for irrigation in South Dakota
(type or print)

RECEIVED

MAR 19 2013

WATER RIGHTS
PROGRAM

Mail to: PMB 2020 DNR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>7797-3</u> (office use only) Hydrologic Unit <u>10170103</u>
	Basin <u>Vermillion</u>
	Newspaper <u>De Smet News</u>
	<u>Plainsman - Huron</u>

Application For Permit To Appropriate Water For Irrigation

Type of Application: ☒ New ☐ Vested Right ☐ Amendment/Correction to Permit No. 3132-3
(Use predates Mar 2, 1955)

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

Amends Water Right No. 3132-3 to transfer location of 40 acres from low, wet area to land more
suitable for irrigation in S1/2 SE1/4 sec 31-T112N-R56W

1. Name to Appear on Irrigation Permit Geib Family Trust(check one) ☒ Owner ☐ Tenant/lessee ☐ Owner's Legal Agent

(name and complete address if different than above name)

Mailing Address 20344 Hwy 25

(Address)

De Smet

(City)

SD 57231

(State)

(Zip Code)

Home Phone 605 854-3188 Cell 605 203-0665 Email geibsusan@yahoo.com

2. Amount of water claimed 1.78 *CFS or **GPM ***AF Total Acreage 80
(*Cubic Feet per Second) (**Gallons per Minute) (***)Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply ground water: 1 existing well (No. 3132-3) and 1 proposed well4. Location of point of diversion Existing well: NW1/4 SE1/4 sec 31-112N-56W

(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)

Proposed well: near center of SE1/4 sec 31-112N-56WCounty Kingsbury5. County or counties where water will be used Kingsbury6. Annual period during which water is to be used Apr 1 - Oct 31

7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.

(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
S1/2 SE1/4 sec 31-112N-56W	80		

8. Give a description of the project. (Attach sheet if more space is needed)

This application transfers the location of 40 acres covered by No. 3132-3 with no reduction in diversion rate authorized by No. 3132-3 (pivot in use requires 1.78 cfs to operate) plus adds 40 acres. This application authorizes a diversion rate in excess of 1 cfs per 70 acres based on the method of irrigation for the 80 acres. A center pivot is planned and requires 1.78 cfs to operate. If the proposed well is not developed, then the existing well will be used to irrigate the acreage covered by No. 3132-3 and this application with no cfs increase.

I, Mark Geib on behalf of Geib Family Trust, the applicant, certify that I have read this application, have examined the attached map, and that the matters stated are true.

SOUTH DAKOTA
WATER PERMIT NO. 7797-3

Date of first receipt of application March 12, 2013.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7797-3 to Geib Family Trust, c/o Mark Geib, 20344 Hwy 25, DeSmet SD 57231 authorizing the construction of the water use system and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 7797-3 appropriates 1.78 cubic feet of water per second (cfs) from a new well and/or the well authorized by Water Right No. 3132-3 for irrigation of 80 acres. The proposed new well is to be completed into the Vermillion East Fork: Spirit Lake Aquifer (60 feet deep) located near the center of the SE 1/4 Section 31 for irrigation of 80 acres located in the S 1/2 SE 1/4 Section 31; all in T112N-R56W. The permit holder will use a new well or the existing well authorized by Water Right No. 3132-3 to irrigate the new 80 acres.
2. The amount of the appropriation may not exceed 2 acre feet annually for each acre of land to which water is actually and beneficially applied for irrigation. The water is to be used during the following described annual period: April 1 – October 31.
3. The date from which applicant may claim right is March 12, 2013.
4. The date of approval of Permit No. 7797-3 is June 3, 2013.
5. One-fifth of the construction is to be completed on or before December 3, 2015.
6. All construction is to be completed on or before June 3, 2018.
7. Water is to be put to beneficial use on or before June 3, 2022.
8. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATIONS

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The new well authorized by Permit No. 7797-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.

(continued)

3. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 7797-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 80 acres with an annual volume not to exceed 2 acre feet of water per acre per year
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

WATER MANAGEMENT BOARD

By: _____

Jeanne Goodman

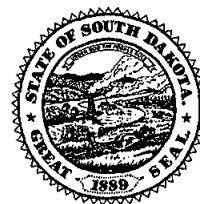
Jeanne Goodman, Chief Engineer

Water Rights Program

Department of Environment and Natural Resources

JUN 20 2013

date



Supplemental Information

(type or print)

1. Well Information

(check one or both as applicable) ☒ Drilling new well(s) ☒ Using existing well(s)

- a) If new wells, how many 1 Have test holes been drilled ☐ Yes ☒ No Drilled by _____
(if yes, please provide copies of logs)
- b) If existing wells, how many _____ Provide copy of log(s), if available. Drilled by _____
- c) Well Depth 60 ft Depth to Top of Water Bearing Material _____ Depth to Water from Surface _____
- d) Distance to nearest existing domestic well:
On applicant's property 3/4 mile On property owned by others approx. 2 miles

2. Wastewater Disposal System Information

- a) Type of System (i.e. septic tank, drain field) _____
- b) System Capacity (gallons) _____ Year Constructed _____
- c) Connected to the City of _____ Sanitary System

3. Dugout Information

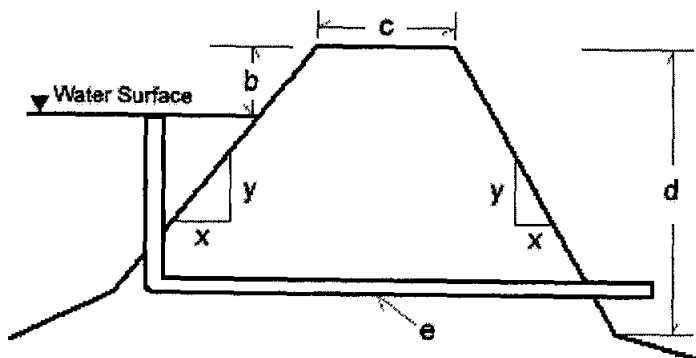
- a) Surface Dimensions _____ Depth _____
- b) Depth to water (ground surface to water level) _____

4. Water Storage Dams

If the proposed water use system contains one or more storage dams, please furnish the information requested below for each dam. The locations of the dams need to be shown on the map submitted with the application.

- a) If a private engineering firm or government agency was involved in the design of this dam, please give their name and address:

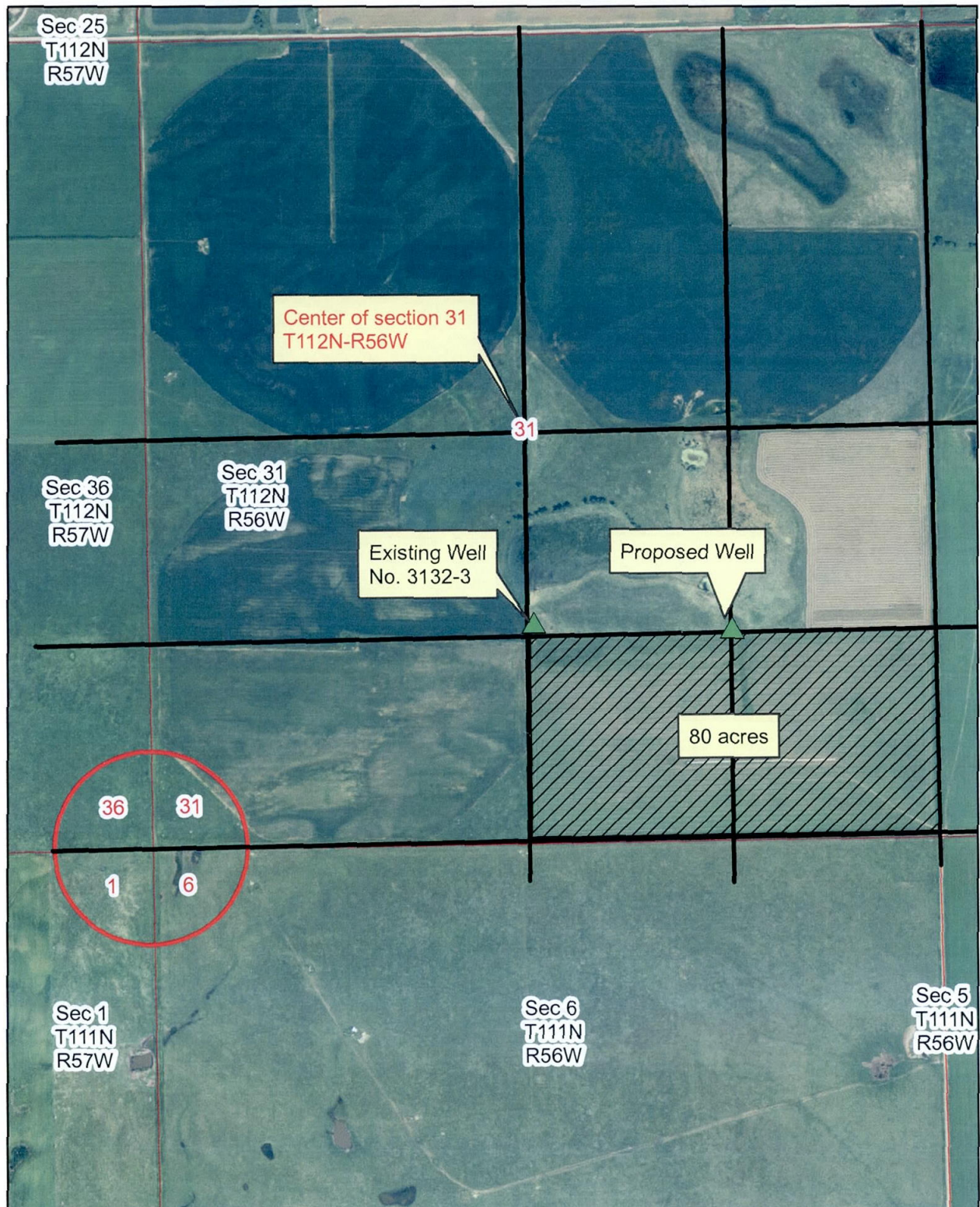
- b) Freeboard _____
- c) Crest Width _____
Crest Length _____
- d) Height _____
- e) Primary Outlet Capacity _____
If pipe, diameter _____
- f) Secondary Spillway Capacity _____
Spillway Width _____
- g) X & Y Slope (e.g. 3 to 1 is a typical slope)
Upstream _____
Downstream _____
- h) Surface Area of Impoundment _____
- i) Storage _____ Acre Feet
- j) Drainage Area Above Dam _____ Acres



Scale: 1 inch = 971 feet

1,400

Feet



South Dakota
Department of Environment
& Natural Resources
Water Rights

RECEIVED

MAR 12 2013

**WATER RIGHTS
PROGRAM**

Completed by:

Ron Duvall, Natural Resources Engineer
Water Rights Program

Date: March 12, 2013

Appl No.

RECEIPT

WATER RIGHTS PROGRAM

South Dakota Department of Environment and Natural Resources

Date 3/19, 20 13

RECEIVED OF Mark Beib Geib Living Trust

The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>7797-3</u> to Appropriate Water, to construct and to put water to beneficial use	750	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>7797-3</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	950 00

No. 06251

By David Erbe
Chief Engineer



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 7797-3, Geib Family Trust**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 7797-3, Geib Family Trust, c/o Mark Geib, 20344 Hwy 25, DeSmet SD 57231.

The Chief Engineer is recommending APPROVAL of Application No. 7797-3 because 1) there is reasonable probability that there is unappropriated water available for the applicant's proposed use, 2) the proposed diversion can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualifications:

1. The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
2. The new well authorized by Permit No. 7797-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28.
3. Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 7797-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 80 acres with an annual volume not to exceed 2 acre feet of water per acre per year
4. This Permit is approved subject to the irrigation water use questionnaire being submitted each year.

See report on application for additional information.

Jeanne Goodman, Chief Engineer
May 15, 2013

REPORT TO THE CHIEF ENGINEER
ON
WATER PERMIT APPLICATION NOS. 7796-3 & 7797-3
GEIB FAMILY TRUST
APRIL 5, 2013

Water Permit Application No. 7796-3 proposes to appropriate water from one well to be completed into the Vermillion East Fork: Spirit Lake aquifer at a maximum diversion rate of 1.71 cubic feet of water per second (cfs). The well will be located in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 30, T112N-R56W and is expected to be approximately 50 feet deep. This application proposes to irrigate 120 acres located in the S $\frac{1}{2}$ SW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 30, all in T112N-R56W in Kingsbury County.

Water Permit Application No. 7797-3 proposes to appropriate water from one well to be completed into the Vermillion East Fork: Spirit Lake aquifer at a maximum diversion rate of 1.78 cubic feet of water per second (cfs). The well will be located near the center of the SE $\frac{1}{4}$ of Section 31, T112N-R56W and is expected to be approximately 60 feet deep. This application proposes to irrigate 80 acres located in the S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 31, in T112N-R56W in Kingsbury County. The applicant is requesting a diversion rate greater than the statutory limit. This application also proposes to use the existing well authorized by Water Right No. 3132-3 to irrigate the new 80 acres. Water Right No. 3132-3 appropriates 1.78 cfs from one well located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 31 to irrigate 136 acres located in the NE $\frac{1}{4}$ of Section 31, all in T112N-R56W.

AQUIFER: Spirit Lake management unit of the Vermillion East Fork aquifer (VEF:SL)

GEOLOGY AND AQUIFER CHARACTERISTICS:

Hedges and others separated the Vermillion East Fork aquifer into various management units (1982). Hamilton did not address these management units and referred to the entire aquifer as the Vermillion East Fork (1989). The SD DENR Water Rights Program follows the management unit boundaries established by Hedges and others (1982), therefore, the proposed well sites are within the Spirit Lake management unit of the Vermillion East Fork aquifer. Figure 1 shows the boundaries of the management units established by Hedges and other (1982) in relation to the proposed and existing well sites.

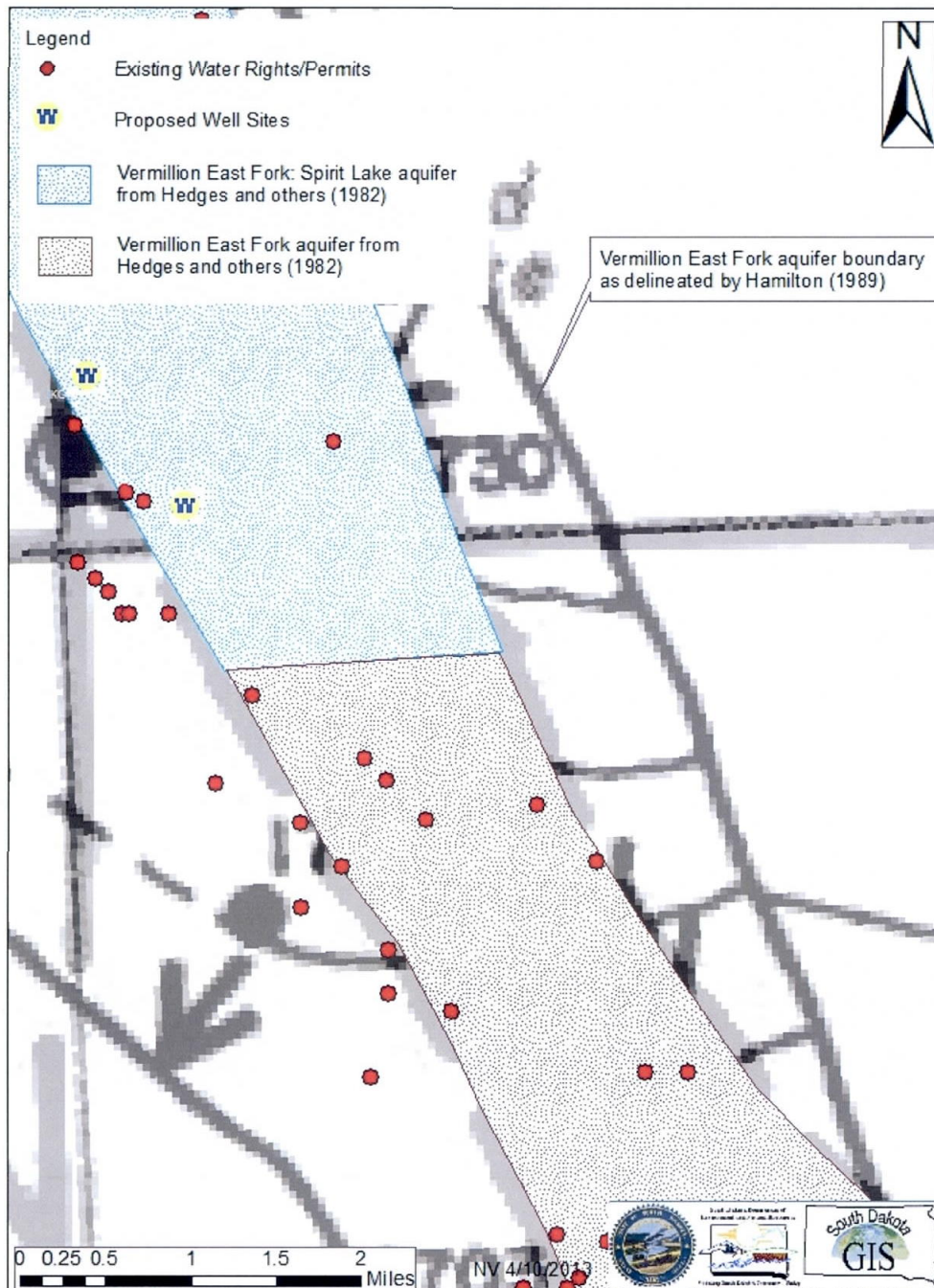


Figure 1. Vermillion East Fork aquifer management unit boundaries (Hedges and others, 1982) and Vermillion East Fork aquifer boundary (Hamilton, 1989).

The Spirit Lake management unit of the Vermillion East Fork aquifer is composed of glacial outwash, medium to very coarse sand and fine gravel (Hamilton, 1989). The aquifer is generally unconfined and is in the area of these applications, as well. The existing and proposed well sites are located in eastern Kingsbury County less than two and one half miles west of the Kingsbury and Brookings county line and less than five and one quarter miles south of the Kingsbury and Hamlin county line. The Spirit Lake management unit of the Vermillion East Fork aquifer encompasses approximately 13,900 acres of Clark and Kingsbury Counties (Hedges and others,

1982). The Spirit Lake management unit contains an estimated 25,640 acre feet of recoverable water in storage, of which an estimated 20,700 acre-feet of recoverable water is in storage in Kingsbury County (Hedges and others, 1982). There is 48 to 64 feet of aquifer material available in the Spirit Lake management unit of the Vermillion East Fork aquifer (Hamilton, 1989). The average hydraulic conductivity of the aquifer is estimated to range from 200 to 600 feet per day (ft/d) (Hamilton, 1989). The saturated thickness available at these well sites is approximately 60 feet (Water Rights, 2013a).

SDCL 46-2A-9

In accordance with SDCL 46-2A-9, a permit may be issued to appropriate water only if there is reasonable probability that there is unappropriated water available for the applicant's proposed use, that the proposed diversion can be developed without unlawful impairment of existing rights and that the proposed use is a beneficial use and in the public interest. This report will review the availability of unappropriated water and existing rights within the Vermillion East Fork: Spirit Lake aquifer.

WATER AVAILABILITY:

These applications propose to appropriate water from the Vermillion East Fork: Spirit Lake aquifer. If these applications are approved, it is likely that the actual water use will be less than 400 acre feet per year (ac-ft/yr) in total. The probability of unappropriated water available from the aquifer can be evaluated using SDCL 46-6-3.1 which requires "No application to appropriate groundwater may be approved if, according to the best information reasonably available, it is probable that the quantity of water withdrawn annually from a groundwater source will exceed the quantity of the average estimated annual recharge of water to the groundwater source." If the source of the water is older or lower than the greenhorn formation and a public water system has applied for a permit, the Board need not consider the recharge/withdrawal issue. Here, a public water system is not involved and the aquifer is not older or lower than the greenhorn formation therefore withdrawal/recharge issue must be considered.

Recharge versus Discharge:

Recharge:

Recharge to the Vermillion East Fork: Spirit Lake aquifer occurs by direct precipitation and leakage from adjacent and underlying till (Hamilton, 1989). The average annual recharge rate to the Vermillion East Fork: Spirit Lake aquifer is estimated to be 4.0 in/yr based on observation well analysis (Hedges and others, 1985). Given the area of the management unit in Clark and Kingsbury Counties of 13,900 acres, average annual recharge to the aquifer is estimated to be 4,633.33 ac-ft/yr. Recharge in Kingsbury County alone is estimated to be 3,066.67 ac-ft/yr based on the 9,200 acres that the aquifer underlies in the county (Hedges and others, 1982).

Discharge:

Discharge from the Vermillion East Fork: Spirit Lake aquifer is by evapotranspiration and drainage to streams and lakes (Hamilton, 1989). There are a number of completion reports on file with the SD DENR-Water Rights Program for domestic use wells completed into the Vermillion East Fork: Spirit Lake aquifer (Water Rights, 2013b), and there are currently 10 water rights/permits appropriating water from the Vermillion East Fork: Spirit Lake aquifer (Water Rights, 2013c). All 10 water rights/permits appropriating water from the Vermillion East Fork: Spirit Lake aquifer are for irrigation purposes. There are seven water rights/permits (two

for RWS and five for irrigation use) and one future use permit within the Vermillion East Fork: Spirit Lake aquifer that have been previously considered appropriations from the Vermillion East Fork aquifer. Future Use Permit No. 5209-3 for Kingbrook RWS reserves 1,100 ac-ft/yr, Water Right Nos. 5426-3 and 6731-3 appropriate 608.16 ac-ft/yr and 1,129.44 ac-ft/yr, respectively for Kingbrook RWS (Water Rights, 2013b).

The amount of water that can be expected to be withdrawn through water rights/permits authorizing water use for non-irrigation purposes at the current appropriation level can be estimated by assuming:

1. Water rights/permits limited by an annual volume will pump the entire volume appropriated.
2. Water rights/permits limited only by diversion rate will pump at the maximum permitted diversion rate 60 percent of the time.
3. Future use permits can be fully developed.

The expected water use for non-irrigation purposes, including that reserved for future use, from the Vermillion East Fork: Spirit Lake aquifer is 2,837.6 ac-ft/yr based on current water appropriations. In 2012, the reported water use for non-irrigation purposes was 1,091 ac-ft/yr.

The annual reported water use from the Vermillion East Fork: Spirit Lake aquifer for irrigation purposes is displayed in Table 1. The average water pumpage reported over the period of record for irrigation purposes is approximately 483 ac-ft/yr. The annual reported water use from the misidentified water rights/permits for irrigation purposes is displayed in Table 2. The average water pumpage reported over the period of record for these water rights/permits is approximately 368 ac-ft/yr. The water usage from domestic wells is not significant to the hydrologic budget.

YEAR	NO. OF PERMITS	APPROPRIATION (AC-FT/YR)	PUMPAGE REPORTED (AC-FT/YR)
2011	9	3875.2	771.92
2010	9	3875.2	311.44
2009	9	3875.2	201.68
2008	9	3875.2	834.31
2007	9	3875.2	732.48
2006	9	3875.2	821.3
2005	9	3875.2	631.76
2004	9	3875.2	599.41
2003	9	3875.2	669.28
2002	9	3875.2	635.47
2001	9	3875.2	188.08
2000	9	3875.2	486.05
1999	9	3875.2	57.46
1998	9	3875.2	420.46
1997	9	3875.2	328
1996	9	3875.2	258.53
1995	9	3875.2	29.42
1994	9	3875.2	58.41
1993	9	3521.2	2.6
1992	9	3521.2	191
1991	9	3635.2	690.4
1990	9	3979.2	383
1989	9	3979.2	1207
1988	9	3979.2	976.8
1987	9	3979.2	393
1986	10	4339.2	138
1985	11	4718	125
1984	11	4718	184
1983	11	4801.2	1193.46
1982	13	4637.2	384.77
1981	12	4802	365
1980	11	4358	958
1979	11	4358	721
MIN	9	3521.2	2.6
MAX	13	4802.0	1207.0
AVE	9.55	4032.72	483.29

Table 1. Irrigation from the Vermillion East Fork: Spirit Lake aquifer (Water Rights, 1979-2011)

YEAR	APPROPRIATION (AC-FT/YR)	PUMPAGE REPORTED (AC-FT/YR)
2011	2102	243.15
2010	2102	187.38
2009	2102	222.77
2008	2102	598.5
2007	2114	475.69
2006	2114	568.94
2005	2114	389.47
2004	2114	813.58
2003	2034	660.16
2002	2034	719.62
2001	2034	404.03
2000	2094	385.65
1999	2094	511.3
1998	2094	270.12
1997	2094	445
1996	2094	272.01
1995	1939	185.18
1994	1939	765.59
1993	1939	71
1992	1939	119
1991	2029	348.4
1990	2029	254.5
1989	2029	438
1988	2029	493.3
1987	2029	282
1986	890	68
1985	890	98
1984	890	166
1983	2029	300.97
1982	2029	357.5
1981	930	279.29
1980	930	371.06
1979	930	358
MIN	890	68
MAX	2114	813.58
AVE	1844.09	367.37

Table 2. Irrigation from the Vermillion East Fork: Spirit Lake aquifer from misidentified water rights/permits not included in Table 1 for Vermillion East Fork: Spirit Lake (Water Rights, 1979-2011)

Comparison of the estimated average annual withdrawal from the Vermillion East Fork: Spirit Lake aquifer with the estimated average annual recharge for the aquifer indicates that the average annual withdrawals from the aquifer do not exceed the average annual recharge to the aquifer. Therefore, unappropriated water is available from the Vermillion East Fork: Spirit Lake aquifer. Specifically, unappropriated water is available for the appropriation proposed by this application.

Observation Well Data:

Administrative Rule of South Dakota Section 74:02:05:07 requires that “the Water Management Board shall rely upon the record of observation well measurements to determine that the quantity of water withdrawn annually from the aquifer does not exceed the estimated average annual recharge to the aquifer”.

The SD DENR-Water Rights Program monitors eight observation wells completed into the Vermillion East Fork: Spirit Lake aquifer with three of these observation wells located within three miles of the existing and proposed well sites (Water Rights, 2013a). Hydrographs for these wells are shown in Figures 2, 3 and 4.

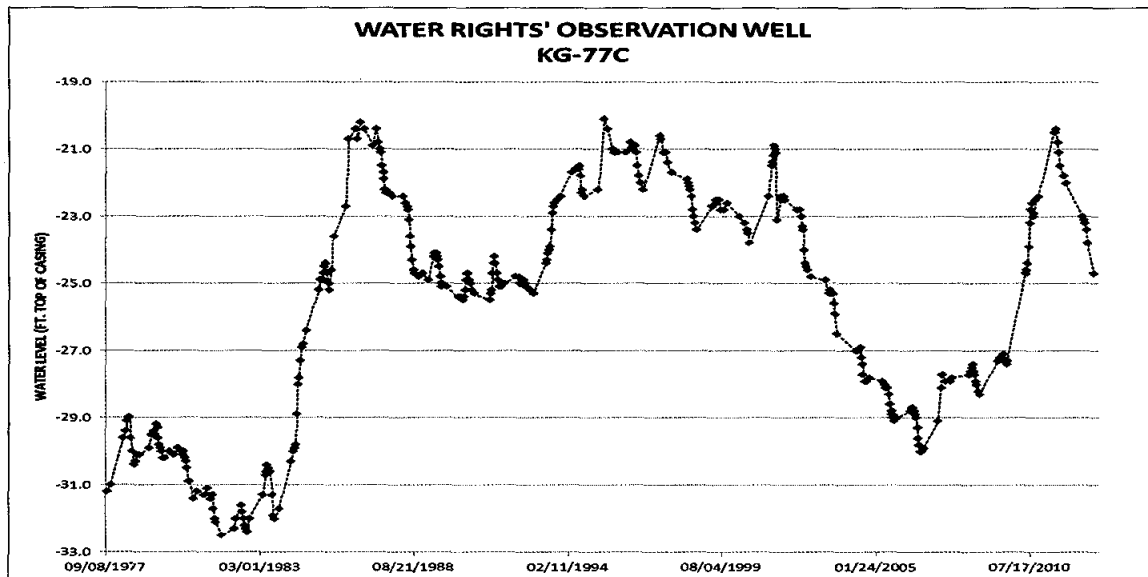


Figure 2. Hydrograph for SD DENR-Water Rights' Observation Well KG-77C completed into the Vermillion East Fork: Spirit Lake aquifer within 600 feet northwest of the existing and proposed well sites (Water Rights, 2013b).

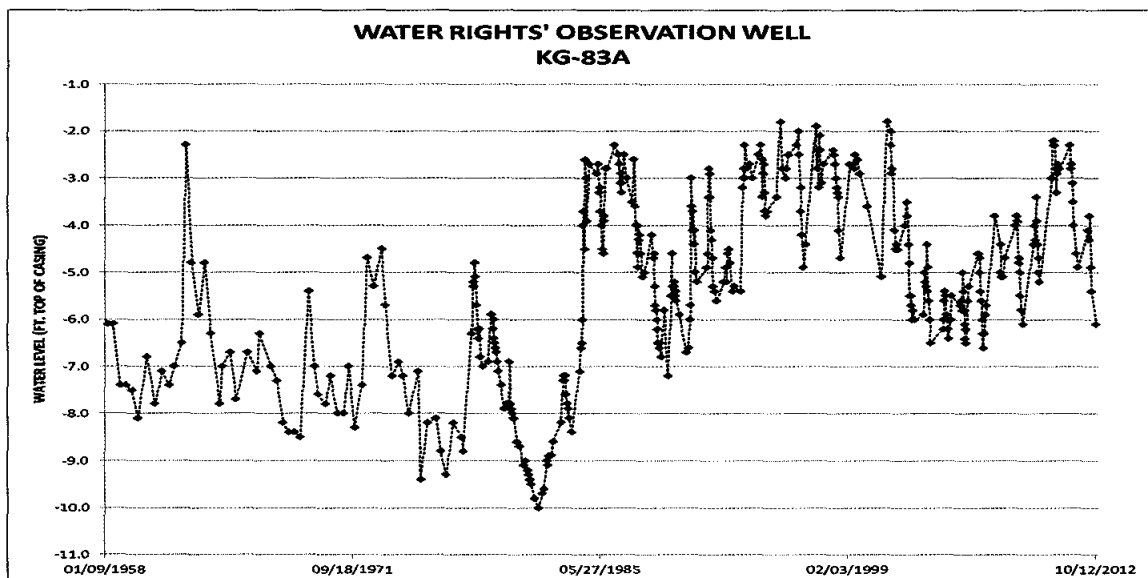


Figure 3. Hydrograph for SD DENR-Water Rights' Observation Well KG-83A completed into the Vermillion East Fork: Spirit Lake aquifer approximately one and one half miles southeast of the existing and proposed well sites (Water Rights, 2013b).

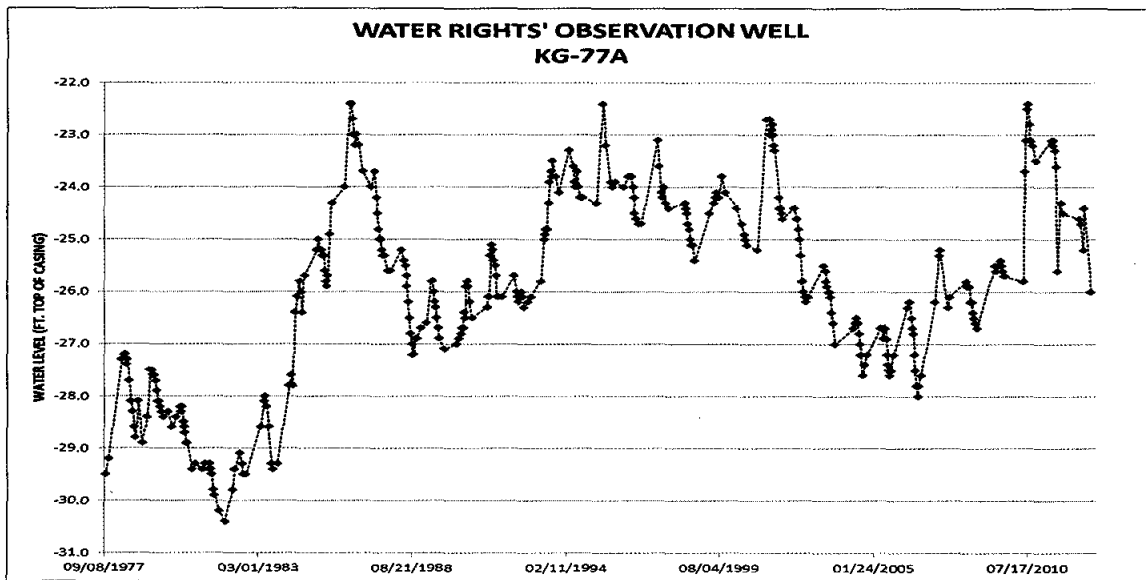


Figure 4. Hydrograph for SD DENR-Water Rights' Observation Well KG-77A completed into the Vermillion East Fork: Spirit Lake aquifer approximately two and one half miles northwest of the existing and proposed well sites (Water Rights, 2013b).

The observation well data shows the aquifer responds well to climatic conditions with rising water levels during wet years and gradually declining water levels during dry years. The water level data shows that over the period of record, in general, discharge has not exceeded recharge. The observation well data shows that at the current level of development, climatic conditions greatly mask the temporal effects of well withdrawals. Therefore, recharge to and natural discharge from the Vermillion East Fork: Spirit Lake aquifer significantly exceeds pumping. Recognizing that natural discharge from the aquifer can be captured for pumping. The hydrograph documents that there is unappropriated water available from the aquifer to support these appropriations.

EXISTING WATER RIGHTS:

The existing and proposed well sites are located in eastern Kingsbury County less than two and one half miles west of the Kingsbury and Brookings county line and less than five and one quarter miles south of the Kingsbury and Hamlin county line. Goodman and Tieman identify the nearby existing rights as withdrawing from the Vermillion East Fork aquifer (Goodman, 1990; Goodman 2004; Tieman, 2006). Based on the management units established by Hedges, these should be identified as withdrawing from the Vermillion East Fork: Spirit Lake aquifer. Figure 5 shows the nearby existing water rights located in the Vermillion East Fork: Spirit Lake and Vermillion East Fork aquifers. The locations of the existing water rights/permits were determined using the best data reasonably available. The nearest water right/permit is Water Right No. 3131-3, for Robert B/Scott A Lee, located more than 1,300 feet west and up-gradient of the existing and proposed well sites for Application No. 7797-3.

Observation Well KG-77C is located within 1,350 feet of Water Right Nos. 6480-3 and 4282-3, for Keith Larson and Marvin Ogren, respectively, and the hydrograph, shown in Figure 2, reports minimal drawdown at this distance due to pumping. To place water to maximum beneficial use a certain amount of drawdown may occur. Water-table conditions dictate that drawdown will be

minimal at these distances. However, the close proximity and concentration of high capacity wells pumping from this relatively thin aquifer could lead to water level declines being compounded and magnified. Drawdown cannot be precisely quantified without aquifer testing in the area. While the withdrawals would not exceed recharge of the aquifer as a whole, this cumulating impact of withdrawals could lead to a reduction of water levels to the extent that local water rights/permits can no longer pump at their developed, or "historically established," diversion rates. If approved, the water permit should include the qualification that the well owner should control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights. Based on the observation well data and the distance between wells, drawdown is not expected to be significant nor likely to cause adverse impacts to existing water rights or domestic wells.



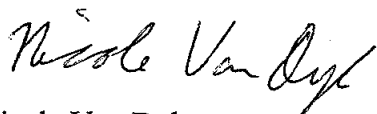
Figure 5. Existing water rights/permits located within close proximity to existing and proposed well sites (Water Rights, 2013c).

SDCL 46-5-6

Pursuant to SDCL 46-5-6, the diversion rate for an irrigation appropriation cannot be in excess of one cubic foot of water per second for every seventy acres, or “the equivalent thereof”. The statute provides that the Water Management Board may allow a greater diversion if the method of irrigation so requires. Water Permit Application No. 7797-3 proposes to divert at a rate of 1.78 cfs to irrigate 80 acres, or the equivalent of 1.56 cfs per 70 acres to a center pivot irrigation system. The applicant did not provide justification for this diversion rate.

CONCLUSIONS:

1. These applications propose to appropriate water from the Vermillion East Fork: Spirit Lake aquifer.
2. There is a reasonable probability that unappropriated water is available from the Vermillion East Fork: Spirit Lake aquifer to supply these proposed appropriations.
3. The Vermillion East Fork: Spirit Lake aquifer is under unconfined (water-table) conditions in this area, and drawdown from pumping is not expected to be significant very far from a production well.
4. There is a reasonable probability that the wells proposed by these applications will not adversely impact existing water rights or domestic wells.



Nicole Van Dyk
SD DENR-Water Rights Program

Approved by



Ken Buhler
SD DENR-Water Rights Program

REFERENCES:

- Goodman, J.A. 1990. Report on Water Permit Application No. 5426-3 for Kingbrook RWS: SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Goodman, J.A. 2004. Report on Water Permit Application No. 6480-3 for Keith Larson: SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Hamilton, L.J., 1989, Water Resources of Brookings and Kingsbury Counties, South Dakota: U.S. Geological Survey Water-Resources Investigations Report 88-4185. 87 p.
- Hedges, L.S., Burch, S.L., Iles, D.L., Barari, R.A., Schoon, R.A., 1982, Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 1: Bedrock Topography and Distribution, Task 2: Extent of Aquifers, Task 3: Ground-Water Storage, Task 4: Computerized Data Base, Final Report; U.S. Army Corps of Engineers Contract DACW 45-80-C-0185

- Hedges, L.S., Allen, J., Holly D.E., 1985, Evaluation of Ground-Water Resources Eastern South Dakota and Upper Big Sioux River, South Dakota and Iowa, Task 7: Ground Water Recharge; U.S. Army Corps of Engineers Contract DACW 45-80-C-0185
- Tieman, A.R. 2006. Report on Water Permit Application No. 6731-3 for Kingbrook RWS: SD DENR-Water Rights Program, Joe Foss Bldg., Pierre, SD.
- Water Rights, 1979-2011, Irrigation Questionnaire Summaries 1979-2011, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2013a, Observation Well Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2013b, Water Well Completion Reports, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.
- Water Rights, 2013c, Water Right/Permit Files, SD DENR-Water Rights Program, Joe Foss Bldg, Pierre, SD.

AFFIDAVIT OF PUBLICATION

RECEIVED

STATE OF SOUTH DAKOTA,
County of Kingsbury.

SS.

JUN 13 2013

WATER RIGHTS
PROGRAM

David Thistle of said county being first duly sworn on oath, says that he is the publisher of **THE DE SMET NEWS**, a weekly newspaper printed and published in De Smet in said County of Kingsbury and has full and personal knowledge of all the facts herein stated; that said newspaper is a legal newspaper and has a bona-fide circulation of a least two hundred copies weekly, and has been published within said County for fifty-two successive weeks next prior to the publication of the notice herein mentioned, and was and is printed wholly or in part in an office maintained at said place of publication; that the

Notice of Application Nos. 7796-3 & 7797-3
7797-3 Geib Family Trust, a printed copy of which, taken from the paper in which the same was published, is attached to this sheet, and is made a part of this Affidavit, was published in said newspaper at least

once in each week for 1 successive weeks, on the day of each week on which said newspaper was regularly published, to-wit:

5/22 2013 : _____ 20____
_____ 20____ : _____ 20____
_____ 20____ : _____ 20____
_____ 20____ : _____ 20____

that the full amount of the fee charged for the publication of said notice accrues to the benefit of the publisher of said newspaper; that no agreement or understanding for the division thereof has been made with any other person; and that no part thereof has been agreed to be paid to any person whomsoever, and that the fees charged for the publication thereof are

\$ 37.20
[Signature]

Subscribed and sworn to before me this 12th
day of June A.D. 20 13
[Signature]
Notary Public
Kingsbury County, South Dakota

My commission expires 9-27, 2017

NOTICE OF APPLICATION NOS. 7796-3 & 7797-3 TO APPROPRIATE WATER

Notice is given that Geib Family Trust, c/o Mark Geib, 20344 Hwy. 25, De Smet, SD 57231, has filed the following applications for a water permit:

Application No. 7796-3 proposes to appropriate 1.71 cubic feet of water per second (cfs) from one well to be completed into the Vermillion East Fork Spirit Lake Aquifer (50 feet deep) located in the SW 1/4 SW 1/4 Section 30 for irrigation of 120 acres located in the S 1/2 SW 1/4 NE 1/4 SW 1/4 W 1/2 SE 1/4 SE 1/4 SE 1/4 Section 30; all in T112N-R56W.

Application No. 7797-3 proposes to appropriate 1.78 cfs from a new well and/or the well authorized by Water Right No. 3132-3 for irrigation of 80 acres. The proposed new well is to be completed into the Vermillion East Fork Spirit Lake Aquifer (60 feet deep) located near the center of the SE 1/4 Section 31 for irrigation of 80 acres located in the S 1/2 SE 1/4 Section 31; all in T112N-R56W. The applicant is requesting a diversion rate greater than the statutory limit. The application also seeks to use the existing well authorized by Water Right No. 3132-3 to irrigate the new 80 acres. Water Right 3132-3 currently appropriates 1.78 cfs from one well located in the NW 1/4 SE 1/4 Section 31 to irrigate 136 acres located in the NE 1/4 Section 31; all in T112N-R56W. The applicant is requesting a diversion rate greater than the statutory limit.

Pursuant to SDCL 46-2A-2, the chief engineer recommends APPROVAL of Application Nos. 7796-3 and 7797-3 because 1) unappropriated water is available, 2) existing rights will not be unlawfully impaired, 3) it is a beneficial use of water, and 4) it is in the public interest. In accordance with SDCL 46-2A-23, the chief engineer will act on these applications, as recommended, unless a petition is filed opposing the applications or the applicant files a petition contesting the chief engineer's recommendations. If a petition opposing the applications or contesting the recommendations is filed, then a hearing will be scheduled and the Water Management Board will consider these applications.

Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting these applications or recommendations must file a written petition with BOTH the applicant and chief engineer. The applicant must file a petition if contesting the chief engineer's recommendations. The chief engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre, SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by June 3, 2013.

The petition may be informal, but must include a statement describing the petitioner's interest in the applications, the petitioner's reasons for opposing or supporting the applications, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to these applications.

Steven M. Pirner
Secretary,
Department of Environment
& Natural Resources

Published once at the total
approximate cost of \$37.20.

5-22-1wc

RECEIVED

MAY 23 2013

PRINTER'S AFFIDAVIT

WATER RIGHTS
PROGRAM

STATE OF SOUTH DAKOTA,
COUNTY OF BEADLE: ss.

I, ELDON JACOBS, being duly sworn on oath, say that THE PLAINSMAN is a daily paper published at Huron, Beadle County, South Dakota, and that said newspaper has a bona fide circulation of at least 250 copies daily; that said newspaper has been published within said county for fifty-two consecutive weeks immediately prior to this date, that said newspaper is printed in whole or in part, in an office maintained at said place of publication; that I am Legal Advertising Coordinator of said newspaper and know the facts herein state. The annexed notice headed:

WATER RIGHTS PROGRAM – MARK GIEB

was published for one day, in said newspaper and not in any supplement of the said newspaper, the publication was of the 22ND day MAY 2013 That the full **FORTY-EIGHT & 74/000** dollars insures to the benefit of the publisher of said newspaper; that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person who has so ever.



Subscribed and sworn to before me this 22ND day of MAY 2013.


Notary Public, South Dakota

My term expires 10/25/2017

Legal # 773

F.P. 05-22-13

**NOTICE OF
APPLICATION NOS.
7796-3 and 7797-3**

to Appropriate Water
Notice is given that Gaib. Family Trust, c/o Mark Geib, 20344 Hwy 25, DeSmet SD 57231 has filed the following applications for a water permit.

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Steven M. Pirner,
Secretary, Department
of Environment and
Natural Resources.

No. 773 (adv.)
Published once at the
total approximate cost of
\$46.30.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

May 15, 2013

DeSmet News
PO Box 69
DeSmet SD 57231

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application Nos. 7796-3 and 7797-3 to Appropriate Water. Please publish the notice once on May 22, 2013. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published and arrange for payment. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is Geib Family Trust, c/o Mark Geib, 20344 Hwy 25, DeSmet SD 57231 (Ph # 605-854-3188).

Please send the Water Rights Program an affidavit or the enclosed Proof of Publication form immediately.

The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,


Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

May 15, 2013

Plainsman
PO Box 1278
Huron SD 57350

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Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

**NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATE, CONTACT
THE NEWSPAPER(S) RIGHT AWAY.**

May 15, 2013

Geib Family Trust
Mark Geib
20344 Hwy 25
DeSmet SD 57231

Dear Mr. Geib:

Water Permit Application Nos. 7796-3 and 7797-3 for irrigation use have been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the DeSmet News printed at DeSmet SD (Ph # 605-854-3331) and the Plainsman printed at Huron SD (Ph # 605-352-6401). You will need to contact the newspaper(s) and authorize publication of this notice. For your information, a copy of the notice, the recommendations of the Chief Engineer and reports on the applications are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper(s) to authorize publication of your Notice and to arrange for payment. Early contact with the paper(s) can eliminate delays. Upon receiving authorization from you, the publisher has been instructed to publish your notice. The newspaper(s) has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the applications.

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the applications.

Instruction to Newspaper - Publish the Notice on May 22, 2013. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF APPLICATION NOS. 7796-3 and 7797-3 to Appropriate Water

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Published once at the total approximate cost of _____.



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

JUN 20 2013

Geib Family Trust
Mark Geib
20344 Hwy 25
DeSmet SD 57231

Dear Mr. Geib:

Enclosed are Water Permit Nos. 7796-3 and 7797-3 authorizing construction of your water diversion systems and beneficial use of the water, not exceeding the limits as specified in the Water Permits.

Form 10's, *Notice of Completion of Works and Application of Water to Beneficial Use*, are enclosed. Please return the completed forms after you have finished the systems and have put the water to beneficial use. An investigation can then be scheduled so the water licenses may be issued, thus completing the acquisition of a water right.

An informational sheet ? *Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

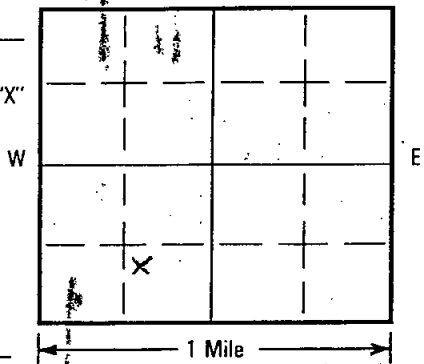
SOUTH DAKOTA WATER WELL COMPLETION REPORT

77973

07-92

Location SE 1/4 SW 1/4 Sec 4 Twp 44-112 Rg 56-W
County Kingsbury

Please mark well location with an "X"



Well Completion Date

9-17-13

LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 1500 ft. from Dld well (identify source).

PROPOSED USE:

- ☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☒ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

Bucket-Frame Casing

CASING DATA:

- ☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>50</u> LB/FT	<u>14</u> IN	<u>+1 1/2</u> FT	<u>26</u> FT	<u>20</u> IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Cement</u>	_____	_____ lb./gal	<u>0</u> ft	<u>10</u> ft
_____	_____	_____ lb./gal	_____ ft	_____ ft

Describe grouting procedure _____

SCREEN:

☐ Perforated pipe ☒ Manufactured
Diameter 14 IN Length 9 FEET
Material CI 1160 PVC
Slot Size 100 Set From 26 Feet to 3.5 Feet
Other information _____

WAS A PACKER OR SEAL USED?

☐ YES ☒ NO

If so, what material? _____

Describe packer(s) and location? _____

DISINFECTION: Was well disinfected upon completion?

☒ YES, How: _____

Laboratory sent to for water quality analysis _____ NO, Why Not? _____

Well Owner: Mark Geib

Business Name: _____

Address: 212344 Hwy 25
DeSmet, S.Dak. 57231

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>SAND, Topsoil</u>	<u>0</u>	<u>4</u>
<u>CLAY, SAND</u>	<u>4</u>	<u>12</u>
<u>Dark Gravel</u>	<u>12</u>	<u>15</u>
<u>Clean Gravel</u>	<u>15</u>	<u>33</u>
<u>Fine Sand</u>	<u>33</u>	<u>35</u>

STATIC WATER LEVEL 12'6" Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

- ☒ Pumped Describe: Sub
☐ Bailed
☐ Other

Pumping Level Below Land Surface

27' ft. After 8 Hrs. pumped 400 GPM

_____ ft. After _____ Hrs. pumped _____ GPM

If pump installed, pump rate _____ GPM

REMARKS

RECEIVED

DEC - 5 2013

WATER RIGHTS PROGRAM

This well was drilled under license # 111

And this report is true and accurate.

Drilling firm Lacey Well Drilling Inc.

Signature of License Representative: _____

Signature of Well Owner or Equitable Property Holder: _____

Date: _____

File No. 7797-3

WATER RIGHTS PROGRAM -- FILE DOCUMENTATION

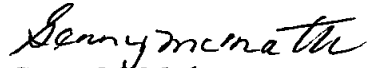
NAME & ADDRESS: Mark Geib, Geib Family Trust, DeSmet SD

DATE: August 27, 2014

RE: completion of works

COMMENTS:

Mark Geib called and spoke with Jeanne Goodman concerning the water use system authorized under Water Permit No. 7797-3. He indicated he was completed with the system and ready for inspection.


Genny McMath
Water Rights Program

Report of Examination of Works and/or Application of Water to Beneficial Use For Permit No. 7797-3

I have this day, October 26, 2015, made a thorough examination of the water use system constructed by Mark Geib, of 20344 Hwy 25, DeSmet, SD 57231 holder of Permit No. 7797-3, bearing the priority of March 12, 2013 authorizing the diversion of 1.78 cu. ft. per second of the waters of the Vermillion East Fork: Spirit Lake Aquifer for irrigation purposes, in Kingsbury County.

Inspection contact & relationship **Mark Geib**
to permit holder, if applicable:

A. Works used to divert the water:

Well Information:

- 1) Well Drilling Firm: Lacey Well Drilling
- 2) No. of Wells one
- 3) Depth(s) 35 feet
- 4) Well log is available Yes

Casing:

- 1) Diameter 14 inches
- 2) Length 40 feet
- 3) Type PVC

Screen:

- 1) Type PVC
- 2) Length 9 feet
- 3) Static water level 12' 6" feet (17 Sept. 2013)

Pump:

- 1) Make Grundfos submersible
- 2) Model 475S400-4
- 3) Size 6-inch
- 4) Horsepower rating 40 hp
- 5) Capacity 550 GPM

B. Works used to transport water to place of use:

- 1) Type Aluminum 2) Size 6 inches 3) Length 60 feet

Comments: **Buried from well to pivot**

C. Works used to apply water to beneficial use:

Center pivot:

- 1) Make T & L hydraulic
 2) Length 1282 feet
 3) Number of towers 8 towers with 15 foot end pipe
 4) End gun Nelson SR100
 5) Capacity 275 GPM

Chemigation Equipment:

- 1) Does chemigate No

D. Compliance with Permit Requirements:

- 1) Permit qualifications being abided by Yes
 2) Irrigation Questionnaires checked to determine if permit owner started irrigation by the end of construction period Yes

List any extended period of nonuse: NA

- 3) Exceptions to compliance are: NA

E. Condition and Location:

1. The system is in good condition with the point of diversion located as follows: 1,414 feet east and 1,327 feet north of the south east corner of Section 31, T112N-R56W, (lat/lon 44.45905/-97.59804).

2. The works are capable of diverting and conveying to the place of use 1.23 cu. ft. per second of water which is to be used for irrigation. Water has been put to beneficial use to the maximum extent as follows:

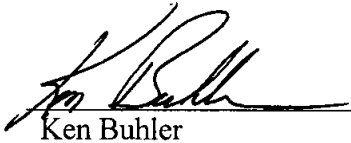
SE¼ SE¼ Section 31, T112N-R56W: 32 acres

SW¼ SE¼ Section 31, T112N-R56W: 32.5 acres

As shown on 7 Nov. 2015 map.

comprising a total of 64.5 acres of land and the license should be issued for 1.23 cfs.

3. All structures, wells and lands on map Yes



Ken Buhler
DENR, Water Rights Program

Date report completed: **1 January 2016**

7797-3

NW SE

NE SE

1414'

32.5 acres

SW SE

1327'

32 acres

SE SE

SE Corner
Sec.31, T112N-R56W

Legend



Well



Pivot



Irrigated_Acres



Section Boundaries - PLSS



660

330

660 Feet

Base Layer: NAIP\South_Dakota_2014_1m

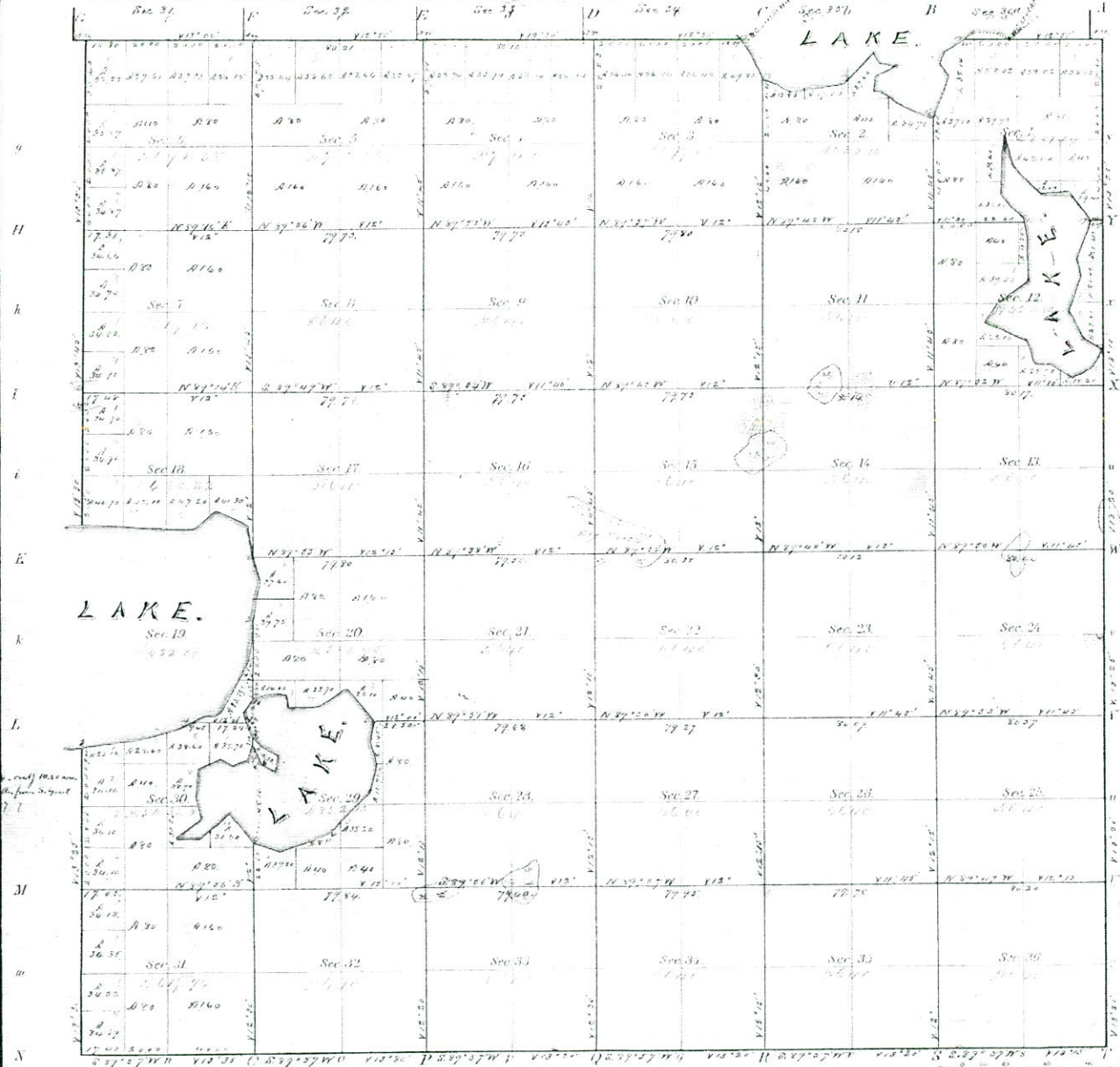
KB

7 Nov 2015



TOWNSHIP N° 112 North RANGE N° 56 West of the 5th Principal MERIDIAN

SOUTH DAKOTA



Measurements of Feet.

N 88° E	24.00	N 88° W	24.00
S 88° E	12.00	S 88° W	12.00
N 87° E	14.00	N 87° W	14.00
S 87° E	14.00	S 87° W	14.00
N 86° E	16.00	N 86° W	16.00
S 86° E	16.00	S 86° W	16.00
N 85° E	18.00	N 85° W	18.00
S 85° E	18.00	S 85° W	18.00
N 84° E	20.00	N 84° W	20.00
S 84° E	20.00	S 84° W	20.00
N 83° E	22.00	N 83° W	22.00
S 83° E	22.00	S 83° W	22.00
N 82° E	24.00	N 82° W	24.00
S 82° E	24.00	S 82° W	24.00
N 81° E	26.00	N 81° W	26.00
S 81° E	26.00	S 81° W	26.00
N 80° E	28.00	N 80° W	28.00
S 80° E	28.00	S 80° W	28.00
N 79° E	30.00	N 79° W	30.00
S 79° E	30.00	S 79° W	30.00
N 78° E	32.00	N 78° W	32.00
S 78° E	32.00	S 78° W	32.00
N 77° E	34.00	N 77° W	34.00
S 77° E	34.00	S 77° W	34.00
N 76° E	36.00	N 76° W	36.00
S 76° E	36.00	S 76° W	36.00
N 75° E	38.00	N 75° W	38.00
S 75° E	38.00	S 75° W	38.00
N 74° E	40.00	N 74° W	40.00
S 74° E	40.00	S 74° W	40.00
N 73° E	42.00	N 73° W	42.00
S 73° E	42.00	S 73° W	42.00
N 72° E	44.00	N 72° W	44.00
S 72° E	44.00	S 72° W	44.00
N 71° E	46.00	N 71° W	46.00
S 71° E	46.00	S 71° W	46.00
N 70° E	48.00	N 70° W	48.00
S 70° E	48.00	S 70° W	48.00
N 69° E	50.00	N 69° W	50.00
S 69° E	50.00	S 69° W	50.00
N 68° E	52.00	N 68° W	52.00
S 68° E	52.00	S 68° W	52.00
N 67° E	54.00	N 67° W	54.00
S 67° E	54.00	S 67° W	54.00
N 66° E	56.00	N 66° W	56.00
S 66° E	56.00	S 66° W	56.00
N 65° E	58.00	N 65° W	58.00
S 65° E	58.00	S 65° W	58.00
N 64° E	60.00	N 64° W	60.00
S 64° E	60.00	S 64° W	60.00
N 63° E	62.00	N 63° W	62.00
S 63° E	62.00	S 63° W	62.00
N 62° E	64.00	N 62° W	64.00
S 62° E	64.00	S 62° W	64.00
N 61° E	66.00	N 61° W	66.00
S 61° E	66.00	S 61° W	66.00
N 60° E	68.00	N 60° W	68.00
S 60° E	68.00	S 60° W	68.00
N 59° E	70.00	N 59° W	70.00
S 59° E	70.00	S 59° W	70.00
N 58° E	72.00	N 58° W	72.00
S 58° E	72.00	S 58° W	72.00
N 57° E	74.00	N 57° W	74.00
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N 56° E	76.00	N 56° W	76.00
S 56° E	76.00	S 56° W	76.00
N 55° E	78.00	N 55° W	78.00
S 55° E	78.00	S 55° W	78.00
N 54° E	80.00	N 54° W	80.00
S 54° E	80.00	S 54° W	80.00
N 53° E	82.00	N 53° W	82.00
S 53° E	82.00	S 53° W	82.00
N 52° E	84.00	N 52° W	84.00
S 52° E	84.00	S 52° W	84.00
N 51° E	86.00	N 51° W	86.00
S 51° E	86.00	S 51° W	86.00
N 50° E	88.00	N 50° W	88.00
S 50° E	88.00	S 50° W	88.00
N 49° E	90.00	N 49° W	90.00
S 49° E	90.00	S 49° W	90.00
N 48° E	92.00	N 48° W	92.00
S 48° E	92.00	S 48° W	92.00
N 47° E	94.00	N 47° W	94.00
S 47° E	94.00	S 47° W	94.00
N 46° E	96.00	N 46° W	96.00
S 46° E	96.00	S 46° W	96.00
N 45° E	98.00	N 45° W	98.00
S 45° E	98.00	S 45° W	98.00
N 44° E	100.00	N 44° W	100.00
S 44° E	100.00	S 44° W	100.00
N 43° E	102.00	N 43° W	102.00
S 43° E	102.00	S 43° W	102.00
N 42° E	104.00	N 42° W	104.00
S 42° E	104.00	S 42° W	104.00
N 41° E	106.00	N 41° W	106.00
S 41° E	106.00	S 41° W	106.00
N 40° E	108.00	N 40° W	108.00
S 40° E	108.00	S 40° W	108.00
N 39° E	110.00	N 39° W	110.00
S 39° E	110.00	S 39° W	110.00
N 38° E	112.00	N 38° W	112.00
S 38° E	112.00	S 38° W	112.00
N 37° E	114.00	N 37° W	114.00
S 37° E	114.00	S 37° W	114.00
N 36° E	116.00	N 36° W	116.00
S 36° E	116.00	S 36° W	116.00
N 35° E	118.00	N 35° W	118.00
S 35° E	118.00	S 35° W	118.00
N 34° E	120.00	N 34° W	120.00
S 34° E	120.00	S 34° W	120.00
N 33° E	122.00	N 33° W	122.00
S 33° E	122.00	S 33° W	122.00
N 32° E	124.00	N 32° W	124.00
S 32° E	124.00	S 32° W	124.00
N 31° E	126.00	N 31° W	126.00
S 31° E	126.00	S 31° W	126.00
N 30° E	128.00	N 30° W	128.00
S 30° E	128.00	S 30° W	128.00
N 29° E	130.00	N 29° W	130.00
S 29° E	130.00	S 29° W	130.00
N 28° E	132.00	N 28° W	132.00
S 28° E	132.00	S 28° W	132.00
N 27° E	134.00	N 27° W	134.00
S 27° E	134.00	S 27° W	134.00
N 26° E	136.00	N 26° W	136.00
S 26° E	136.00	S 26° W	136.00
N 25° E	138.00	N 25° W	138.00
S 25° E	138.00	S 25° W	138.00
N 24° E	140.00	N 24° W	140.00
S 24° E	140.00	S 24° W	140.00
N 23° E	142.00	N 23° W	142.00
S 23° E	142.00	S 23° W	142.00
N 22° E	144.00	N 22° W	144.00
S 22° E	144.00	S 22° W	144.00
N 21° E	146.00	N 21° W	146.00
S 21° E	146.00	S 21° W	146.00
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N 13° E	162.00	N 13° W	162.00
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N 12° E	164.00	N 12° W	164.00
S 12° E	164.00	S 12° W	164.00
N 11° E	166.00	N 11° W	166.00
S 11° E	166.00	S 11° W	166.00
N 10° E	168.00	N 10° W	168.00
S 10° E	168.00	S 10° W	168.00
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S 8° E	172.00	S 8° W	172.00
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S 7° E	174.00	S 7° W	174.00
N 6° E	176.00	N 6° W	176.00
S 6° E	176.00	S 6° W	176.00
N 5° E	178.00	N 5° W	178.00
S 5° E	178.00	S 5° W	178.00
N 4° E	180.00	N 4° W	180.00
S 4° E	180.00	S 4° W	180.00
N 3° E	182.00	N 3° W	182.00
S 3° E	182.00	S 3° W	182.00
N 2° E	184.00	N 2° W	184.00
S 2° E	184.00	S 2° W	184.00
N 1° E	186.00	N 1° W	186.00
S 1° E	186.00	S 1° W	186.00
N 0° E	188.00	N 0° W	188.00
S 0° E	188.00	S 0° W	188.00
N 359° E	190.00	N 359° W	190.00
S 359° E	190.00	S 359° W	190.00
N 358° E	192.00	N 358° W	192.00
S 358° E	192.00	S 358° W	192.00
N 357° E	194.00	N 357° W	194.00
S 357° E	194.00	S 357° W	194.00
N 356° E	196.00	N 356° W	196.00
S 356° E	196.00	S 356° W	196.00
N 355° E	198.00	N 355° W	198.00
S 355° E	198.00	S 355° W	198.00
N 354° E	200.00	N 354° W	200.00
S 354° E	200.00	S 354° W	200.00
N 353° E	202.00	N 353° W	202.00
S 353° E	202.00	S 353° W	202.00
N 352° E	204.00	N 352° W	204.00
S 352° E	204.00	S 352° W	204.00
N 351° E	206.00	N 351° W	206.00
S 351° E	206.00	S 351° W	206.00
N 350° E	208.00	N 350° W	208.00
S 350° E	208.00	S 350° W	208.00
N 349° E	210.00	N 349° W	210.00
S 349° E	210.00	S 349° W	210.00
N 348° E	212.00	N 348° W	212.00
S 348° E	212.00	S 348° W	212.00
N 347° E	214.00	N 347° W	214.00
S 347° E	214.00	S 347° W	214.00
N 346° E	216.00	N 346° W	216.00
S 346° E	216.00	S 346° W	216.00
N 345° E	218.00	N 345° W	218.00
S 345° E	218.00	S 345° W	218.00
N 344° E	220.00	N 344° W	220.00
S 344° E	220.00	S 344° W	220.00
N 343° E	222.00	N 343° W	222.00
S 343° E	222.00	S 343° W	222.00
N 342° E	224.00	N 342° W	224.00
S 342° E	224.00	S 342° W	224.00
N 341° E	226.00	N 341° W	226.00
S 341° E	226.00	S 341° W	226.00
N 340° E	228.00	N 340° W	228.00
S 340° E	228.00	S 340° W	228.00
N 339° E	230.00	N 339° W	230.00
S 339° E	230.00	S 339° W	230.00
N 338° E	232.00	N 338° W	232.00
S 338° E	232.00	S 338° W	232.00
N 337° E	234.00	N 337° W	234.00
S 337° E	234.00	S 337° W	234.00
N 336° E	236.00	N 336° W	236.00
S 336° E	236.00	S 336° W	236.00
N 335° E	238.00	N 335° W	238.00
S 335° E	238.00	S 335° W	238.00
N 334° E	240.00	N 334° W	240.00
S 334° E	240.00	S 334° W	240.00
N 333° E	242.00	N 333° W	242.00
S 333° E	242.00	S 333° W	242.00
N 332° E	244.00	N 332° W	244.00
S 332° E	244.00	S 332° W	244.00
N 331° E	246.00	N 331° W	246.00
S 331° E	246.00	S 331° W	246.00
N 330° E	248.00	N 330° W	248.00
S 330° E	248.00	S 330° W	248.00
N 329° E	250.00	N 329° W	250.00
S 329° E	250.00	S 329° W	250.00
N 328° E	252.00	N 328° W	252.00
S 328° E	252.00	S 328° W	252.00
N 327° E	254.00	N 327° W	254.00
S 327° E	254.00	S 327° W	254.00
N 326° E	256.00	N 326° W	256.00
S 326° E	256.00	S 326° W	256.00
N 325° E	258.00	N 325° W	258.00
S 325° E	258.00	S 325° W	258.00
N 324° E	260.00	N 324° W	260.00
S 324° E	260.00	S 324° W	260.00
N 323° E	262.00	N 323° W	262.00
S 323° E	262.00	S 323° W	262.00
N 322° E	264.00	N 322° W	264.00
S 322° E	264.00	S 322° W	264.00
N 321° E	266.00	N 321° W	266.00
S 321° E	266.00	S 321° W	266.00
N 320° E	268.00	N 320° W	268.00
S 320° E	268.00	S 320° W	268.00
N 319° E	270.00	N 319° W	270.00
S 319° E	270.00	S 319° W	270.00
N 318° E	272.00	N 318° W	272.00
S 318° E	272.00	S 318° W	272.00
N 317° E			

NOTICE OF COMPLETION OF WORKS AND APPLICATION OF WATER TO BENEFICIAL USE

Date 26 Oct 2015

TO: Water Rights Program, DENR
523 E. Capitol
Pierre, SD 57501-3181

FROM: MARK GEIB, GEIB FAMILY TRUST
(name)

20344 HWY 25
(address)

DeSmet SD 57231
(city, state, zip)

854.3188
(phone)

I have completed the construction of the water use system and I have put the water to beneficial use to the maximum extent it is going to be used.

Water Permit No. 7797-3 states that the water use system is to be constructed by

JUNE 3, 2018
(date)

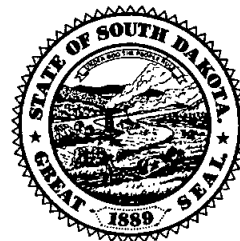
, and water is to be put to beneficial use by JUNE 3, 2022
(date)

The water use system was completed on 1 MAY 2015
(date)

Applying the water to beneficial use was completed on 2 MAY 2015
(date)

You may schedule an investigation so that the water license may be issued.

Mark Geib
(signature)





DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

7797-3

MAY 02 2016

Geib Family Trust
Mark Geib
20344 Hwy 25
DeSmet SD 57231

Dear Mr. Geib:

Enclosed is Water License No. 7797-3. This is the final water right document completing your process of obtaining a Water Right. Also, included with your license is a map prepared by the staff engineer who conducted the investigation.

As long as you use the water beneficially, as stated in the Water License, the State Water Laws provide that you have a continuing right to use the water. If you have any questions, please contact our office.

Sincerely,

Jeanne Goodman, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 7797-3

(1) Geib Family Trust, c/o Mark Geib, 20344 Hwy 25, DeSmet SD 57231 made Application No. 7787-3, March 12, 2013 for a water permit to divert 1.78 cubic feet of water per second (cfs) from one or two wells – Vermillion East Fork: Spirit Lake Aquifer, Kingsbury County, South Dakota for irrigation purposes. Permit No. 7797-3, with a priority date of March 12, 2013 was approved June 3, 2013 and issued to the applicant for diversion of water with construction of the described water supply system to be completed on or before June 3, 2018 and for the application to beneficial use of water on or before June 3, 2022.

The permit holder submitted a *Notice of Completion of Works and Application of Water to Beneficial Use* on October 26, 2015. The *Notice* stated the diversion system was completed on May 1, 2015 and the water placed to beneficial use on May 2, 2015.

(2) The water supply system has been completed and water applied to beneficial use in accordance with South Dakota State Law. Pursuant to South Dakota Codified Law 46-5-30.1, the holder and/or owner of Water Right No. 7797-3 is issued a license, bearing a priority date of March 12, 2013 to appropriate 1.23 cubic feet of water per second from one well – Vermillion East Fork: Spirit Lake Aquifer to irrigate 64.5 acres.

The diversion point is located: 1,414 feet east and 1,327 feet north of the SE corner of Section 31-T112N-R56W (NW 1/4 SE 1/4, near the center of the SE 1/4). The acres authorized for irrigation are as follows:

Section 31-T112N-R56W	SE 1/4 SE 1/4	32 acres	SW 1/4 SE 1/4	32.5 acres
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Total 64.5 acres

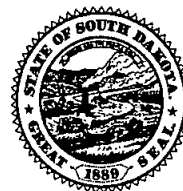
(3) This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Permit No. 7797-3 including the following qualifications:

- The well approved under this Permit will be located near domestic wells and other wells which may obtain water from the same aquifer. The well owner under this Permit shall control his withdrawals so there is not a reduction of needed water supplies in adequate domestic wells or in adequate wells having prior water rights.
- The new well authorized by Permit No. 7797-3 shall be constructed by a licensed well driller and construction of the well and installation of the pump shall comply with Water Management Board Well Construction Rules, Chapter 74:02:04 with the well casing pressure grouted (bottom to top) pursuant to Section 74:02:04:28. *The well was drilled by Lacey Well Drilling, Inc. in September, 2013. A copy of the log is on file with the Water Rights Program.*
- Pursuant to SDCL 46-5-6 which allows a greater diversion rate if the method of irrigation, time constraints, or type of soils so requires, Permit No. 7797-3 authorizes a maximum diversion rate of 1.78 cfs for the irrigation of 80 acres with an annual volume not to exceed 2 acre feet of water per acre per year. *Maximum diversion rate is reduced to 1.23 cfs based on actual usage.*
- This Permit is approved subject to the irrigation water use questionnaire being submitted each year.


Jeanne Goodman, Chief Engineer
Water Rights Program
Department of Environment and Natural Resources

MAY 02 2016

date





7797-3
DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

November 8, 2017

Mark Gieb
20344 Hwy 25
DeSmet SD 57231

Dear Mr. Gieb:

Well completion reports filed by Lacey Well Drilling show they completed two wells for you this past spring. The reports indicate one well is for stock water and the other is for irrigation use with both wells being located in the SW 1/4 Section 4-T112N-R56W (copies enclosed).

A review of our files indicates Geib Family Trust holds Water Right Nos. 3132-2, 7797-3 and 7796-3 for irrigation located in Sections 30 and 31; T112N-R56W. Are you proposing to use the new well for irrigation? If so, a water permit is required for this use.

Enclosed are application forms and an instruction sheet to apply for a water permit for irrigation. The completed forms with the application fee and map can be returned to: Water Rights Program, 523 E Capitol, Pierre SD 57501.

If you believe your water use does not require a water permit or that you have an existing permit, or if help is needed completing the application forms, please contact Eric Gronlund or me. We will be happy to assist you in any way possible.

Sincerely,

A handwritten signature in cursive script that reads 'Karen Schlaak'.

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us

enclosures

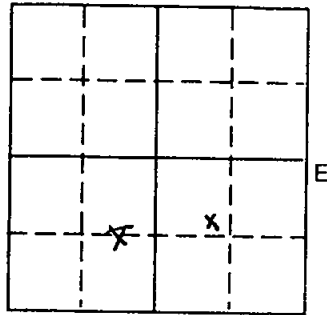
SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SE 1/4 SW 1/4 Sec 31 T112N R56W Twp 113N Rg 56W
SW 1/4 per AM
 County NW 1/4 SE 1/4 Sec 31 T112N R56W North 11/2/17

Kingsbury
 add well to 7797-3

Please mark well location with an "X"



Well completion Date

5-29-17

Distance to nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.)

? 300' ft from stock Dam (identify source)

PROPOSED USE:

☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☒ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

Bucket false casing

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>50 LB/FT</u>	<u>14" IN</u>	<u>+1 1/2 FT</u>	<u>226" FT</u>	<u>20 IN</u>
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Bentonite</u>	<u>30 bags</u>	<u>Lb/gal</u>	<u>0 Ft</u>	<u>10 Ft</u>
<u>mixed</u>		<u>Lb/gal</u>	<u>Ft</u>	<u>Ft</u>

Describe grouting procedure with clay water

SCREEN:

☐ Perforated pipe ☒ Manufactured
 Diameter 14 Inches Length 9' Feet
 Material PVC CLASS 160
 Slot Size 1/80 Set From 226" Feet to 316" Feet
 Other information

WAS A PACKER OR SEAL USED?

☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How?

Chlorine in

☐ No, Why Not?

Lab sample sent to for water quality analysis

2 mg

Please return WHITE COPY to: DENR Water Rights

Well Owner:

Mark Geib

Business Name:

Address:

20344 Hwy 25

City, State, Zip:

De Smet, SD 57231

WELL LOG:

DEPTH

FORMATION	FROM	TO
Topsoil	0	2
Yellow Clay	2	8
Yellow Sand	8	15
Coarse Gravel	15	316"

STATIC WATER LEVEL

12'

FEET

If flowing: closed in pressure

PSI

GPM flow through inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other

Reduced flow rate GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped Describe:

sub

☐ Bailed

☐ Other

Pumping Level Below Land Surface

24' Ft. After 2 Hrs. pumped 350 GPM

Ft. After Hrs. pumped GPM

If pump installed, pump rate: GPM

REMARKS

Prehistoric Series: Unknown AM

This well was drilled under license # 111

And this report is true and accurate.

Drilling firm: Lacey Well Drilling, Inc.

Signature of License Representative:

RECEIVED

Joan Reddick
 Signature of Well Owner or Equitable Property Holder:

JUL 13 2017

WATER RIGHTS PROGRAM

Mark Geib

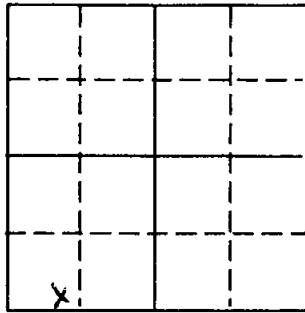
523 E Capitol Ave. Pierre SD 57501

SOUTH DAKOTA WATER WELL COMPLETION REPORT

11-02

Location SW 1/4 SW 1/4 Sec 4 Twp N41W Rg 56WCounty KingsburyNorth Prairie 11/21/17

Please mark well location with an "X"



Well completion Date

6-5-17

1 Mile

Distance to nearest potential pollution source (Septic tank, abandoned well, feed lot, etc.)

? 150' ft. from old well (identify source)

PROPOSED USE:

☒ Domestic/Stock
☐ Irrigation
☐ Municipal
☐ Industrial
☐ Business
☐ Institutional
☐ Test Holes
☐ Monitoring

METHOD OF DRILLING:

Bucket - Cable Casing

CASING DATA:

☐ Steel ☒ Plastic ☐ Other

If other describe

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>5</u> LB/FT	<u>8</u> IN	<u>+2</u> FT	<u>8'6"</u> FT	<u>20</u> IN
LB/FT	IN	FT	FT	IN
LB/FT	IN	FT	FT	IN

GROUTING DATA:

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Bentonite</u>	<u>14</u> pkts	<u>300</u> Lb/gal	<u>1</u> Ft	<u>2'6"</u> Ft
	<u>11217</u>	Lb/gal	Ft	Ft

Describe grouting procedure

SCREEN:

☐ Perforated pipe ☒ Manufactured
 Diameter 8" Inches Length 3' Feet
 Material AVC
 Slot Size #100 Set From 8'6" Feet to 11'6" Feet
 Other information

WAS A PACKER OR SEAL USED?

☐ Yes ☒ No

If so, what material?

Describe packer(s) and location

DISINFECTION: Was well disinfected upon completion?

☒ Yes, How?
Chlorine in pack
☐ No, Why Not?

Lab sample sent to for water quality analysis

Stock

Please return WHITE COPY to: DENR Water Rights

Well Owner:

Mark Geib

Business Name:

Address:

20344 Hwy 25

City, State, Zip:

Desmet, So Dak. 57231

WELL LOG:

DEPTH

FORMATION

FROM

TO

Gumbo03Dirty Sand35Clean Coarse Gravel510Blue Clay w/ bones hole1011'6"

STATIC WATER LEVEL

3'

FEET

If flowing: closed in pressure

PSI

GPM flow

through

Inch pipe

Controlled by

☐ Valve

☐ Reducers

☐ Other

Reduced flow rate

GPM

Can well be completely shut in?

WELL TEST DATA:

☒ Pumped

Describe:

2" cent.
☐ Bailed

☐ Other

Pumping Level Below Land Surface

7'

Ft. After

1

Hrs. pumped

25

GPM

Ft. After

Hrs. pumped

GPM

If pump installed, pump rate:

GPM

REMARKS

Pleistocene Series: UnknownAM

This well was drilled under license #

111

And this report is true and accurate.

Drilling firm:

Lacey Well Drilling Inc.

Signature of License Representative:

Joan Redden Lacey

Signature of Well Owner or Equitable Property Holder:

Mark Geib

Date:

6/19/17

523 E Capitol Ave.

Pierre SD 57501

RECEIVED

JUL 13 2017

WATER RIGHTS PROGRAM

73386

SOUTH DAKOTA WATER WELL COMPLETION REPORT

07-92

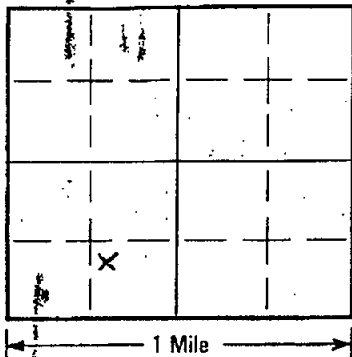
Location SE 1/4 SW 1/4 Sec 4 Twp 44-112 Rg 56-W

County Kingsbury 3/1 North

Please mark well location with an "X"

Well-Completion Date

9-17-13



LOCATION:

Distance from nearest potential pollution source (septic tank, abandoned well, feed lot, etc.)? 1500 ft. from old well (identify source).

PROPOSED USE:

- ☐ Domestic/Stock ☐ Municipal ☐ Business ☐ Test Holes
☒ Irrigation ☐ Industrial ☐ Institutional ☐ Monitoring well

METHOD OF DRILLING:

Bucket-fake casing

CASING DATA:

- ☐ Steel ☒ Plastic ☐ Other

If other describe _____

PIPEWEIGHT	DIAMETER	FROM	TO	HOLE DIAMETER
<u>50 LB/FT</u>	<u>14 IN</u>	<u>+112 FT</u>	<u>206 FT</u>	<u>20 IN</u>
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN
_____ LB/FT	_____ IN	_____ FT	_____ FT	_____ IN

GROUTING DATA

Grout Type	No. of Sacks	Grout Weight	From	To
<u>Cement</u>	_____	_____ lb./gal	<u>0</u> ft	<u>10</u> ft
_____	_____	_____ lb./gal	_____ ft	_____ ft

Describe grouting procedure _____

SCREEN:

☐ Perforated pipe ☒ Manufactured
 Diameter 14 IN Length 9 FEET
 Material CI 1160 PVC
 Slot Size 100 Set From 26 Feet to 35 Feet
 Other information _____

WAS A PACKER OR SEAL USED?

☐ YES ☒ NO

If so, what material? _____
 Describe packer(s) and location? _____

DISINFECTION:

Was well disinfected upon completion?

Laboratory sent to for water quality analysis

Ill.

Well Owner: Mark Geib

Business Name: _____

Address: 212344 Hwy 25

DeSmet, S.Dak. 57231

WELL LOG:

FORMATION	DEPTH	
	FROM	TO
<u>SAND, TOPSOIL</u>	<u>0</u>	<u>4</u>
<u>CLAY, SAND</u>	<u>4</u>	<u>12</u>
<u>Dirt, Gravel</u>	<u>12</u>	<u>15</u>
<u>Clean Gravel, Gravel</u>	<u>15</u>	<u>33</u>
<u>Fine Sand</u>	<u>33</u>	<u>35</u>

STATIC WATER LEVEL 12'6" Feet

If flowing: closed in pressure _____ PSI

GPM flow _____ through _____ inch pipe

Controlled by ☐ Valve ☐ Reducers ☐ Other _____

Reduced Flowrate _____ GPM

Can well be completely shut in? _____

WELL TEST DATA:

☒ Pumped Describe: Sub
☐ Bailed _____
☐ Other _____
 Pumping Level Below Land Surface
27' ft. After 8 Hrs. pumped 400 GPM
 _____ ft. After _____ Hrs. pumped _____ GPM
 If pump installed, pump rate _____ GPM

REMARKS

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DEC - 5 2013

WATER RIGHTS
PROGRAM

This well was drilled under license # 111

And this report is true and accurate.

Drilling firm Lacey Well Drilling Inc.

Signature of License Representative: _____

Signature of Well Owner or Equitable Property Holder: _____

Date: _____



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE SOUTH DAKOTA 57501-3182
<http://denr.sd.gov>

November 14, 2017

Mark Gieb
20344 Hwy 25
DeSmet SD 57231

Dear Mr. Gieb:

Based on our phone conversation, you indicated one of two wells drilled by Lacey Well Drilling this past spring was an additional well to Water Right No. 7797-3. Water Right No. 7797-3 authorizes 1.23 cubic feet of water per second (approximately 550 gallons per minute) from one well (Vermillion East Fork: Spirit Lake Aquifer) to irrigate 64.5 acres located in the S 1/2 SE 1/4 Section 31-T112N-R56W.

We handle requests for additional wells by having the permit holder file an application, well drillers report and a map showing the location of the wells. We then review the application to determine if the request can be handled in-house. No fee is required at this time. If we determine the more formal permit process must be followed, we will request you submit a fee.

Enclosed is a partially completed application requesting the additional well. Please review, sign and return the application. On the enclosed map, please mark and label the location of the new well.

Also, the well completion report states the well is located in Section 4-T112N-R56W. I will correct this location once you identify the location of the well on the map. Is the stock well located in Section 4-T112N-R56W? If not, what is the correct location of the stock well?

No increase in the authorized diversion rate of 550 gallons per minute from the Vermillion East Fork: Spirit Lake Aquifer is requested. If the diversion rate increases, a new water permit will need to be obtained.

If you have questions, please contact Eric Gronlund or me.

Sincerely,

Karen Schlaak
Water Rights Program
605 773-3352
karen.schlaak@state.sd.us

enclosures

Stock well is in
Section 4-T112N-R56W.

RECEIVED

NOV 29 2017

WATER RIGHTS
PROGRAM

Mail to:

DENR - Water Rights
523 E Capitol Ave
Pierre, SD 57501-3182
ph. (605) 773-3352

If any more questions call
605-203-0665.

Thanks
Mark

Application For Permit To Appropriate Water For Irrigation

Type of Application: ☐ New ☐ Vested Right ☒ Amendment/Correction to Permit No. 7797-3

(Use predates Mar 2, 1955)

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

Requesting additional diversion point under 46-5-13.1

1. Name to Appear on Irrigation Permit Mark Gieb Geib

Note: The "Name to Appear on Irrigation Permit" must be the name in which the property to be irrigated is held in.

Mailing Address 20344 Hwy 25 DeSmet SD 57231
(Address) (City) (State) (Zip Code)

Phone _____ Mobile 605 203-0665 Email _____

2. Amount of water claimed no add'l *CFS or _____ **GPM _____ ***AF Total Acreage no add'l
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Vermillion East Fork Spirit Lake Aquifer

X 4. Location of point of diversion 2 wells in S.E. 1/4 of Sec. 31 T112N - R56W
(example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W)
Spirit Lake Township County Kingsbury

5. County or counties where water will be used Kingsbury

6. Annual period during which water is to be used April 1 - October 31

7. List below each forty acre division, or lot, or fraction thereof and show number of acres to be irrigated in each.
(Attach sheet if more space is needed)

Land Description	Acres	Land Description	Acres
Same lands as authorized under No. 7797-3	<u>65</u>		

8. Give a description of the project. (Attach sheet if more space is needed)

No increase in the diversion rate of 1.23 cfs or 64.5 acres authorized by Water Right No. 7797-3

X I, Mark Geib Owner, the applicant, certify under
Name of Person Title (if applicable)

penalty of perjury that I have read this application, examined the attached map, and that the matters stated are true. I further certify, if acting on behalf of an entity or individual other than myself, that I am authorized to submit this application.

7797-3

NW SE

NE SE

1414'

32.5 acres

SW SE

1327'

32 acres

SE SE

Legend



Well



Pivot

 Irrigated_Acres

 Section Boundaries - PLSS



660

330

660 Feet

Base Layer: NAIP\South_Dakota_2014_1m

SE Corner
Sec.31, T112N-R56W

KB
7 Nov 2015



Additional Diversion Point Request

NAME: Water Right No. 7797-3, Geib Family Trust

ADDRESS: 20344 Hwy 25, DeSmet SD 57231

DATE: January 11, 2018 **COUNTY:** Kingsbury **TELEPHONE:**

BACKGROUND:

Water Permit No. 7797-3 originally appropriated 1.78 cubic feet of water per second (cfs) from two wells completed in the Vermillion East Fork: Spirit Lake aquifer located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 31-T112N-R56W for the irrigation of 80 acres located in the S $\frac{1}{2}$ SE $\frac{1}{4}$ Section 31- T112N-R56W. One of the wells was an existing well authorized by Water Right No. 3132-2 and the other was to be a new well located very near the center of the SE $\frac{1}{4}$ of Section 31.

Permit No. 7797-3 was licensed in 2016 based on an on-site inspection for an appropriation of 1.23 cfs from one well and the irrigation system applied water to 64.5 acres. The well included in the license was a new well drilled to supply the irrigation. The existing well authorized by Water Right No. 3132-3 was not being used to irrigate the S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 31 and was not included on the water license.

The report of examination of works for No. 7797-3 includes an oddity in that the pump in the developed well was said to have a capacity of 1.23 cfs (552 gpm) and the center pivot has a listed capacity of 0.61 cfs (275 gpm). The license was issued for 1.23 cfs based on the well's pump capacity.

In July 2017, DENR received two completion reports filed by Lacey Well Drilling for wells drilled for Mark Geib. That prompted DENR to contact Mr. Geib regarding the purpose of these new wells. The well in Section 4-T112N-R56W is for stockwatering. The well in Section 31-T112N-R56W is an additional well to supply water to the irrigation system authorized by Water Right No. 7797-3.

Mr. Geib filed an application to authorize the additional well. The new well is located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 31-T112N-R56W about 200 feet north of the existing well. The application indicates no additional water is requested and no additional acres to be irrigated. It should be noted that Water Right No. 7797-3 authorizes irrigation of 64.5 acres. Mr. Geib's request lists 65 acres. It is presumed that Mr. Geib rounded the acres irrigated up and only 64.5 acres are irrigated.

AUTHORITY:

Pursuant to SDCL 46-5-13.1, the location of a diversion point may be changed or additional diversion points may be licensed provided the following conditions are met and the potential for interference with other existing diversions is not increased.

Developed water source same as permitted source and no additional water appropriated

The water source authorized by Water Permit No. 7797-3 is the Vermillion East Fork: Spirit Lake aquifer. The additional well is completed to a depth consistent with the other well which is 35 feet deep. Based on the proximity and depth of the intended well, the water source will be the Vermillion East Fork: Spirit Lake aquifer.

No additional appropriation of water is requested. The water permit is limited to a diversion rate of 1.23 cfs which equates to 552 gallons per minute. The request for the additional well location does not request greater diversion rate authority.

Review of Existing Diversions

DENR's water rights databases were reviewed for the nearest domestic wells and water rights on file.

The nearest domestic wells completed into the Vermillion East Fork aquifer on file are located just over 1 ½ miles to the east, northwest and southwest.

The nearest existing water right for a well completed into the Vermillion East Fork aquifer is held by Geib Family Trust about 1,000 feet west of additional well location. The next closest water right is about 1,800 feet to the additional well location. Kingbrook Rural Water System's well field is approximately 3,500 feet to the southwest of the additional well. The additional well being requested by Mr. Geib will not be located any closer to these existing water rights.

The Water Rights Program has observation wells completed into this area of the Vermillion East Fork: Spirit Lake aquifer. The closest observation well completed into this aquifer is KG-77C which is located less than one mile to the northwest of the Geib's existing well. This observation well is in close proximity to irrigation wells. KG-77C has been in existence since 1977 and fluctuations are dominated by climatic conditions with very little fluctuations due to seasonal pumping.

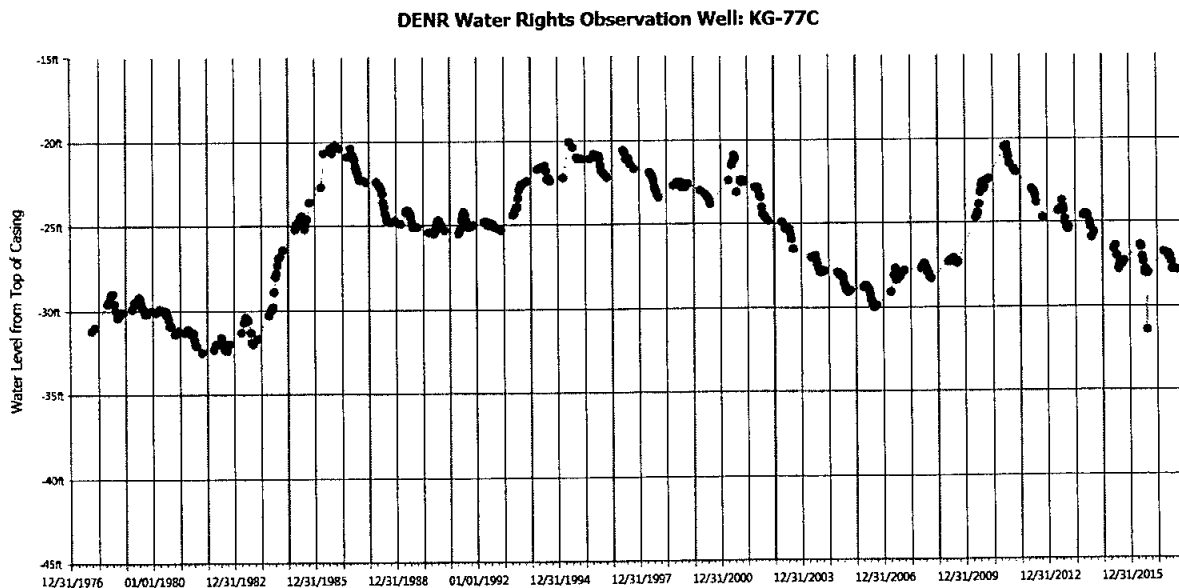


Figure 1 – Hydrograph for Observation Well KG-77C

The next closest observation well completed into this aquifer is KG-83A which is located just over a mile east of the additional well location. KG-83A is a replacement for KG-57A which had been in existence since 1957. The hydrograph shows seasonal fluctuations due to effects of pumping. The long term water level is again dominated by climatic conditions. The hydrograph for this observation well is found in Figure 2.

DENR Water Rights Observation Well: KG-83A

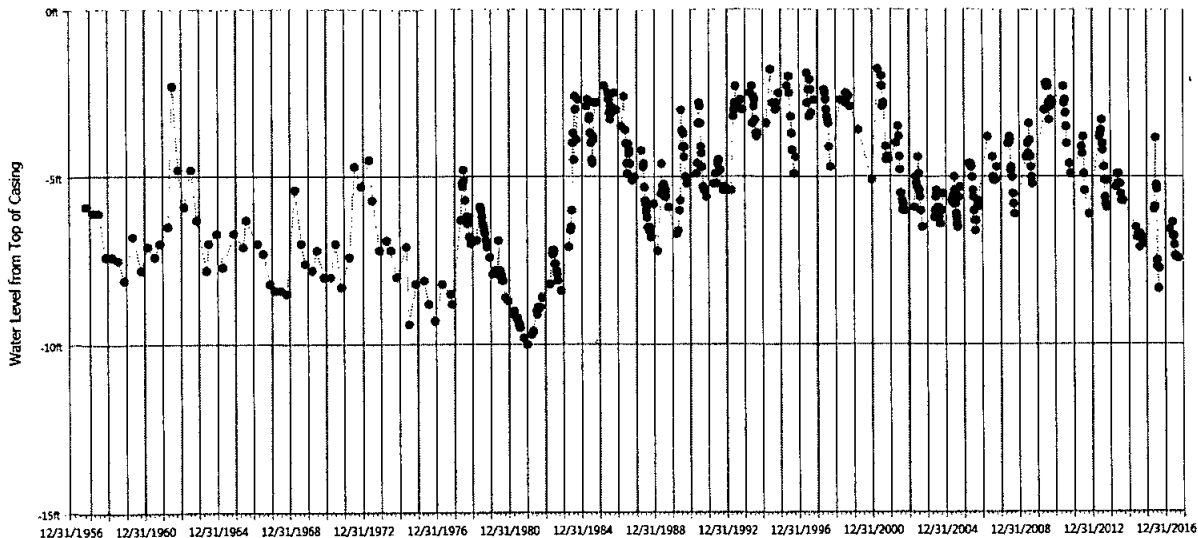


Figure 2 – Hydrograph for Observation Well KG-83A

Based on the historic water levels there is seasonal effects of pumping but the overall trend appears to be predominately controlled by climatic conditions. Therefore, authorizing this additional well does not significantly increase the potential for interference with other existing diversions.

CONCLUSION

- The additional well does not seek to appropriate additional water.
- The well will be completed into the Vermillion East Fork: Spirit Lake aquifer.
- No additional acres are requested to be irrigated.
- Given the distance from domestic wells and water rights, the additional well does not increase the potential for adverse interference with existing diversions.

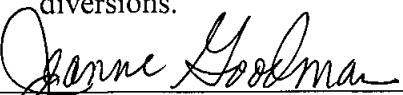
RECOMMENDED ACTION

Based on the above criteria, it is recommended that the additional diversion point location be authorized under Water Right No. 7797-3.


Eric Gronlund
Water Rights Program

The Chief Engineer makes a finding pursuant SDCL 46-5-13.1 and ARSD 74:02:01:14.01 that:

The additional diversion point does not increase the potential for adverse effects to existing diversions.


Jeanne Goodman, Chief Engineer
Water Rights Program



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

January 18, 2018

Mark Geib
20344 Hwy 25
DeSmet SD 57231

Dear Mr. Geib:

Water Right No. 7797-3 appropriates 1.23 cubic feet of water per second (cfs) from one well completed in the Vermillion East Fork Spirit Lake aquifer located in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 31-T112N-R56W for the irrigation of 64.5 acres located in the S $\frac{1}{2}$ SE $\frac{1}{4}$ Section 31-T112N-R56W.

You have filed a request for authorization for an additional well to Water Right No. 7797-3. The request is to supplement the existing wells to bring production to the permitted amount. The additional well is to be located in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 31-T112N-R56W about 200 feet north of the existing well.

Upon review of the request and pursuant to SDCL 46-5-13.1, the additional well location is authorized without application or publication of a notice of hearing pursuant to SDCL 46-2A-4.

Granting of this additional well does not authorize an increase in the authorized pump rate of 1.23 cfs (552 gpm). If the pump rate is increased above this amount, water right permitting will be required.

If you have any questions, please contact Eric Gronlund at (605) 773-3352.

Sincerely,


Jeanne Goodman, Chief Engineer
Water Rights Program